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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/706,937      | 11/06/2000  | Thomas Huber         | N0070US             | 8577             |

37583 7590 12/28/2005

NAVTEQ NORTH AMERICA, LLC  
222 MERCHANDISE MART  
SUITE 900, PATENT DEPT.  
CHICAGO, IL 60654

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| EXAMINER |
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LE, MIRANDA

|          |              |
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| ART UNIT | PAPER NUMBER |
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2167

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/706,937

Applicant(s)

HUBER ET AL.

Examiner

Miranda Le

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 8-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/30/05 has been entered.

2. This communication is responsive to Amendment filed 09/30/2005.

Claims 1-6, 8-14 are pending in this application. Claims 1, 2, 14 are independent claims. In the Amendment, claims 1-3, 8-14 have been amended; no claims have been added, or cancelled. This action is made non-Final.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claims 1-6, 8-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, specifically a software application. Computer programs claimed as computer code per se, i.e., the descriptions or expressions of the programs, are not physical "things," nor are they statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer

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program and other claimed aspects of the invention that permit the computer program's functionality to be realized. In contrast, a claimed computer - readable medium encoded with a computer program defines structural and functional interrelationships between the computer program and the medium which permit the computer program's functionality to be realized, and is thus statutory. See MPEP §2106 Section IV.B.1(a).

Claims 1-6, 8-14 recite mere arrangement of non-functional data (i.e. an index for a geographic database containing data that represent geographic features) that does not exhibit any functional interrelationship with the way in which computing processes are performed. Therefore, such descriptive material is considered non-statutory subject matter because it does not constitute a statutory manufacture, process, machine or composition of matter.

#### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless:

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. Claims 1-5, 9, 11, 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Kothuri (US Patent No. 6,381,605).

Kothuri anticipated independent claim 2 by the following:

**As per claim 1**, Kothuri teaches an index (See Abstract) for a geographic database (i.e. geographic information, col. 5, line 31) containing data that represent geographic features (i.e. city-level, col. 6, lines 12-21), said index comprising:

a structure that includes three dimensions (i.e. methods are provided for storing a hierarchical index of multi-dimensional data in a relational database management system, col. 3, lines 16-19);

wherein a first dimension of said three dimensions includes latitude boundary information (i.e. geographic data is often expressed in terms of latitude and longitude, col. 5, lines 53-62),

a second dimension of said three dimensions includes longitude boundary information (i.e. geographic data is often expressed in terms of latitude and longitude, col. 5, lines 53-62),

said data that represent geographic features indexed by said structure are searchable spatially using a latitude and a longitude (i.e. Searchable attributes refer to those attributes or dimensions that may be specified as part of a search or query--such as in a WHERE clause of a SELECT statement in SQL, col. 14, lines 34-54),

wherein a third dimension of said three dimensions includes rank information (i.e. Sort the data items in the selected dimension, col. 13, lines 43, col. 13, line 16 to col. 14, line 54),

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wherein said data that represent geographic features are organized into layers (i.e. clustering, col. 13, line 16) based on a rank (i.e. state 510 and 514, col. 15, lines 5-13) associated with the represent features (col. 13, line 16 to col. 14, line 54, col. 15, lines 1-43),

said data that represent geographic features indexed by said structure are searchable for said rank of the geographic features (col. 14, lines 34-54, col. 18, line 45 to col. 19, line 28, col. 20, lines 31-67).

**As per claim 2**, Kothuri teaches an index for a geographic database containing geographic data that represent geographic features, said index comprising:

a structure that includes two spatial dimensions (i.e. latitude and longitude, col. 5, lines 53-62) and a non-spatial third dimension (i.e. A first index may then be constructed on the basis of city-level selectivity in the region dimension, col. 6, lines 12-21),

wherein said structure is a k-d- tree index structure comprising a root node, intermediate nodes and leaf nodes (See Fig. 4, col. 11, lines 42-49, col. 12, lines 13-65),

whereby said geographic data indexed by said structure are searchable spatially using said two spatial dimension and a latitude and a longitude (col. 14, lines 34-54, col. 18, line 45 to col. 19, line 28, col. 20, lines 31-67),

whereby said geographic data indexed by said structure are searchable for a non-spatial property of the indexed geographic data that represent the geographic features using said third dimension (i.e. A first index may then be constructed on the basis of city-level selectivity in the region dimension, col. 6, lines 12-21, col. 14, lines 34-54, col. 18, line 45 to col. 19, line 28, col. 20, lines 31-67),

wherein said non-spatial property of geographic data includes at least one of:

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a rank associated with the graphic features represented by the geographic data (i.e. Sort the data items in the selected dimension, col. 13, lines 43),

a granularity of said indexed geographic data (col. 6, lines 12-21).

**As per claim 14**, Kothuri teaches an index for data comprising:

a structure that includes a first dimension, a second dimension and a third dimension (i.e. methods are provided for storing a hierarchical index of multi-dimensional data in a relational database management system, col. 3, lines 16-19),

wherein said first dimension includes latitude boundary information (i.e. geographic data is often expressed in terms of latitude and longitude, col. 5, lines 53-62, wherein said second dimension includes longitude boundary information (i.e. geographic data is often expressed in terms of latitude and longitude, col. 5, lines 53-62),

whereby said data indexed by said structure are searchable using a latitude and a longitude (i.e. A first index may then be constructed on the basis of city-level selectivity in the region dimension, col. 6, lines 12-21),

wherein a property of said indexed data is searchable using said third dimension (col. 14, lines 34-54, col. 18, line 45 to col. 19, line 28, col. 20, lines 31-67).

**As per claim 3**, Kothuri said structure is a k-d- tree index structure comprising a root node, intermediate node and leaf nodes, wherein each node is part of a parent-child relationship wherein each parent node includes control information from which one of at least two child nodes associated with the parent node are distinguishable based on search key (See Fig. 4, col. 11, lines 42-49, col. 12, lines 13-65).

**As per claim 4**, Kothuri improved index is homogeneous (col. 9, line 21 to col. 10, line 34, col. 14, lines 18-33).

**As per claim 5**, Kothuri teaches said improved index is non-homogeneous (col. 9, line 21 to col. 10, line 34, col. 14, lines 18-33).

**As per claim 9**, Kothuri teaches said non-spatial property is a granularity of the indexed data (col. 6, lines 12-21).

**As per claim 11**, Kothuri teaches property is a scale associated with the indexed data (col. 13, line 16 to col. 14, line 54).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).



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7. Claims 6, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kothuri (US Patent No. 6,381,605), in view of Fujii et al. (US Patent No. 6,256,581).

**As per claim 6**, Kothuri does not explicitly teach “said geographic features are roads”. Fujii teaches this limitation at col. 5, lines 26-63.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the cited references because Fujii’s teachings of the geographic features are roads would have allowed Kothuri’s to automatically generate route guide map and route guide sentence for obtaining clear route information.

**As per claim 10**, Kothuri does not expressly teach “said non-spatial property is a viewing altitude associated with the indexed data”. Fujii teaches this limitation at col. 5, lines 26-63.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the cited references because Fujii’s teachings of the non-spatial property is a viewing altitude associated with the indexed data would have allowed Kothuri’s to automatically generate route guide map and route guide sentence for obtaining clear route information.

8. Claims 12, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kothuri (US Patent No. 6,381,605), in view of Dunworth et al. (US Patent No. 5,930,474).

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**As per claim 12**, Kothuri does not specifically teach “property is an expiration date associated with the indexed data”. Dunworth teaches this limitation at col. 24, lines 29-39.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the cited references because Dunworth’s teachings of property is an expiration date associated with the indexed data would have allowed Kothuri’s to efficiently organize information into a consistent presentation and geographically organized information.

**As per claim 13**, Kothuri does not expressly teach “property is a creation date associated with the indexed data”. Dunworth teaches this limitation at col. 23, lines 14-46.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the cited references because Dunworth’s teachings of property is a creation date associated with the indexed data would have allowed Kothuri’s to efficiently organize information into a consistent presentation and geographically organized information.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kothuri (US Patent No. 6,381,605), in view of Rosenberg et al. (US Patent No. 5,499,366).

**As per claim 8**, Kothuri does not explicitly teach “rank includes both integers and fractional values”. However, Rosenberg teaches this limitation at col. 8, lines 30-38.

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It would have been obvious to one ordinarily skilled in the art at the time of the invention to combine the cited references because Rosenberg's teachings of would have allowed Kothuri's to utilizes these weighted scale values to select a number of solutions from an existing database of possible solutions.

*Response to Arguments*

10. Applicant's arguments regarding Hancock does not teach the amended claims 1-3, 8-14 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

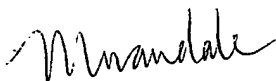
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

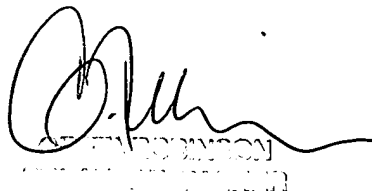
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere, Esq., can be reached on (571) 272-3780. The fax number to this Art Unit is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Miranda Le  
December 21, 2005



ATTESTATION  
UNIT 2167